

ABSTRACT OF THE DISCLOSURE

A layer 1 frame, capable of accommodating data of any protocol selected from an STM (Synchronous Transfer Mode) signal, ATM (Asynchronous Transfer Mode) cells, a primary IP (Internet Protocol) packet and a best effort IP packet in a common frame format, is constructed by an edge node and transmitted to a data transfer system composed of edge nodes, core nodes, etc. The layer 1 frame includes a layer 1 frame header, a layer 1 frame payload and a payload CRC (Cyclic Redundancy Check) field. The layer 1 frame header includes a "Packet Length" identifier, a "Priority" identifier, a "Protocol" identifier indicating the type of the data, a "Frame Mode" identifier, a "Stuff" identifier indicating whether or not stuff data is contained in the layer 1 frame, and a "Header CRC" identifier. The layer 1 frame payload contains a layer 2 frame having a layer 2 frame header and a layer 2 frame payload in which the data is packed. STM layer 1 frames containing the STM signals are transferred with the highest priority at fixed intervals (125 μ sec). Best effort IP layer 1 frames containing the best effort IP packets are transferred with the lowest priority. Partitioning of the best effort IP layer 1 frame, stuffing, dummy frames, etc. are employed for implementing the periodical transmission of the STM layer 1 frames.